

National Marine Protected Areas Center
Information Exchange for Marine Educators
Archive of Educational Programs, Activities and Websites

4-H Goes to Sea

4-H Goes to Sea is a pilot curriculum project for 4-H youngsters aged 6 - 13. University of New Hampshire marine docent volunteers partner with 4-H leaders to help with the curriculum. There are six modules: open ocean, Gulf of Maine and watersheds, sandy beaches, rocky shores, salt marshes, and estuaries. Field experiences introduce the module and the leaders are asked to use the curriculum in interim meetings.

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AAAS Atlas of Population and the Environment

The AAAS Atlas of Population and Environment provides maps, text, and graphics that quantify and illustrate the broader links between population dynamics and the environment. Analyses of individual topics bring together what is known about the ways in which people impact the Earth's environment. Lastly, the atlas contains six case studies that look at population-environment relationships in selected areas.

<http://atlas.aaas.org/> .

AAAS Launches Public Outreach Initiative Focused on Science Literacy

Science. It's Everywhere is a public outreach initiative by the American Association for the Advancement of Science through the Partnership for Science Literacy. Designed to help parents and families play a more active role in their children's science education, it includes multi-media advertising along with a web site, in English and Spanish, to help motivate parents and families to take action in helping their children learn science.

<http://www.tryscience.org/parents/parent.html>

Adopt-A-Beach School Assembly Program for Los Angeles Watershed

The Malibu Foundation offers a comprehensive environmental program designed to motivate teachers and K-12 students to care about beaches and oceans. The *Adopt-A-Beach School Assembly Program* demonstrates how beaches and oceans get dirty and provides hands-on opportunities to make a difference by recycling, reducing litter, and cleaning up the beaches.

<http://www.malibufoundation.org/tmffe004.htm>

After the Storm Television Special about Watersheds

The Environmental Protection Agency and the Weather Channel co-produced *After the Storm*, a television special about watersheds. *After the Storm* shows the connection between weather and watersheds and the importance of watershed protection. Key scientists, water quality experts, and citizens involved in local and national watershed protection efforts provide insight into the problems as well as solutions to today's water quality crisis.

www.epa.gov/weatherchannel .

El Agua Es Importante

El Agua Es Importante: guia de maestro sobre recursos de agua, Volumen 3, available free, includes a teacher's guide and posters created by the U.S. Geological Survey's Water Resources Education Initiative. Designed to help primary and middle school teachers satisfy National Science Education Standards and promote query-based, hands-on learning, topics include oceans and coastal hazards, watersheds, and more.
<http://www.epa.gov/ncepihom/ordering.htm>

Aiming for Excellence: An Evaluation Handbook for Interpretive Services in California State Parks

This handbook provides measures and measurement tools for assessing the quality of educational and interpretive services. It includes visitor evaluation, performance appraisals, evaluation forms and a bibliography. It is available for downloading from the website.

http://www.parks.ca.gov/default.asp?page_id=21700

Alaska Department of Fish and Game Website

The Alaska Department of Fish and Game's mission is to manage, protect, maintain, and improve the fish, game and aquatic plant resources of Alaska. The website contains many resources of interest to marine and coastal educators, including the Alaska Wildlife Curriculum, the Wildlife Notebook Series, and links to refuges, critical habitats, and sanctuaries.

http://www.sf.adfg.state.ak.us/region2/ie/Teacher_Resources/html/teachres.stm

Alaska Fisheries Science Center Cold Water Coral Video and Science Resource Guide On-Line

Journey deep beneath the cold waters of the Aleutian Island archipelago from your computer and explore the rich abundance of life on the sea floor. The "Coral Gardens of the Aleutians" streaming video is set up for either Broadband or dial-up connection. Also available from Alaska Fisheries is a down-loadable Science Resource Guide to help students understand the work of NOAA Fisheries.

http://www.afsc.noaa.gov/abl/MarFish/coral_gardens_video.htm

http://www.afsc.noaa.gov/sep/ResGuide_TOC.htm

Applied Environmental Education and Communication

Applied Environmental Education and Communication is an international peer-reviewed quarterly for both academics and practitioners. It features articles, a discussion and editorial section, and books and materials reviews. A special themed issue on environmental education and communication for biodiversity will be published in 2004. The deadline for submissions is June 1, 2004.

<http://www.aeec.org/submission/submission.asp> .

Assessing and Monitoring Floatable Debris

Assessing and Monitoring Floatable Debris is designed to provide guidance in assessing and monitoring floatable debris as directed by the BEACH Act of 2000. A copy of can be found on EPA's website.

<http://www.epa.gov/owow/oceans/debris/floatingdebris/>

At Sea – A Cruise and Virtual Expedition to the Oculina Banks

Scientists and students explored deepwater coral reefs of the Oculina Banks, stretching 30 miles offshore from Ft. Pierce to Cape Canaveral, Florida. This remote MPA is designated a habitat of particular concern, and is a model for efforts underway to create new MPAs throughout southeast U.S. waters and the Gulf of Mexico. The team used a Remotely Operated Vehicle to study the current health of coral on the banks.

<http://oceanica.cofc.edu/Oculina2003/home.htm>

Atlantic and Gulf Rapid Reef Assessment Program Report

The Atlantic and Gulf Rapid Reef Assessment (AGRRA) Program is a joint program of the University of Miami's Rosenstiel School of Marine and Atmospheric Science and The Ocean Research and Education Foundation. A comprehensive survey of coral reefs in 20 areas of the Western Atlantic can be used to compare the current health of one reef to that of another, and to evaluate future changes.

<http://www.coral.noaa.gov/agra/index.html>

Atlas of Extratropical Storm Tracks

From the NASA Goddard Institute for Space Studies comes information about mid-latitude storm systems, including maps of storm frequency and intensity as well as plots of individual storm paths. Maps are available as monthly and seasonal means for the years 1961 through 1998 in either global or hemispheric projections.

<http://www.giss.nasa.gov/data/stormtracks/>

Atlas of the Biosphere

The Center for Sustainability and the Global Environment's *Atlas of the Biosphere* contains numerous maps documenting environmental phenomena across the globe, such as water resources, ecosystems, land use patterns, and human impact, at a variety of scales. The Atlas also contains the data sets that were used to generate these different thematic maps.

<http://atlas.aos.wisc.edu/maps.php>

Atlas of Wetlands in the St. Lawrence Valley

The *Conservation Atlas of Wetlands in the St. Lawrence Valley* from Environment Canada, an interactive GIS mapping site, pinpoints the location of some 20,000 wetlands. It provides definitions of the various wetlands and their roles, statistical and descriptive data for specific areas, and conservation options. Users can create their own maps from the original database.

<http://lavoieverte.gc.ec.gc.ca/faune/AtlasTerresHumides/AtlasTerresHumides.html>

Audubon Lesson Plans On-Line

Wild Republic's Learning Adventure features lesson plans about nature, animals and their habitat; this year's focus is on birds. Educators at Audubon provided the necessary content for the 2003-2004 lesson plans, including Puffins, upwelling, coastal food webs, and more. Each unit is designed to enrich students' knowledge and understanding of birds, their characteristics and habitats.

<http://www.wildrepublic.com/lessonplans/2003/index.html> .

Back to the Sea of Cortez: Sailing with the Spirits of John Steinbeck and Ed Ricketts

A team of scientists will embark on a 73-foot fishing boat to retrace the historic expedition that John Steinbeck and Edward F. "Doc" Ricketts made to explore the Sea

of Cortez in 1940. Their journey was immortalized in a book they wrote together, *The Log from the Sea of Cortez*. A science writer will travel with the expedition and post a daily log of the journey online. Students and teachers in Baja California will join the expedition for different days of studying life in the tide pools.

www.seaofcortez.org and www.mardecortez.org.

Biodiversity Guide for Developing Countries

SciDev.Net is an organization devoted to providing news and promoting debate on science and technology issues relevant to the needs of developing countries. The online guide to the biodiversity challenges facing developing countries looks at the issues surrounding the need to protect global biodiversity in developing countries and the need to promote social and economic growth.

www.scidev.net/biodiversity

The Case of the Wacky Water Cycle

The NASA SCience Files™ series is a distance learning initiative to integrate and enhance the teaching of mathematics, science, and technology in grades 3-5. Each episode includes hands-on classroom and home activities, virtual field trips, subject-matter experts, a video broadcast, educator's guide and web-based activities and materials. *The Case of the Wacky Water Cycle* began airing October, 2004.

<http://scifiles.larc.nasa.gov/>

Center for Improved Engineering and Science Education (CIESE)

CIESE at the Stevens Institute of Technology sponsors and designs interdisciplinary projects that teachers throughout the world can use to enhance their curriculum and learn problem-solving through use of the Internet. The *Virtual Gulf Stream Voyage* is a allows students to access real time ocean & atmospheric data and historical primary source materials to explore real world problems, and *The Stowaway Adventure--Adventures on the High Seas*, offers Language Arts and Social Studies activities.

<http://www.k12science.org/currichome.html>.

Census of Marine Life

The Census of Marine Life assesses the diversity, distribution, and abundance of ocean life and to explain how it changes over time. The different elements include: Initial Field Projects; History of Marine Animal Populations; Ocean Biogeographic Information System; Future of Marine Animal Populations; Scientific Committee on Oceanic Research Working Group; and Known, Unknown and Unknowable.

www.coml.org

Center for Alaskan Coastal Studies

The Center for Alaskan Coastal Studies (CACS), based in Homer, Alaska, provides spring school field trip programs during April and May to diverse rocky beaches with extreme tides that range from +24 feet to -5 feet, a salt marsh, bog, lake, coastal forest trail system and sites of archaeological and geological interest. CACS has coastal education curriculum units for grades 4-12, along with many other educational programs.

<http://www.akcoastalstudies.org>

Classroom Earth

The National Environmental Education & Training Foundation (NEETF) launched Classroom Earth, a free website to help educators find the best and most usable environmental education programs available. It is a collection of environmental

education programs and resources for K-12 teachers, parents, and students. This new site will help educators, after-school providers, and home-schooling parents to get started or improve their skills in environmental education.

www.ClassroomEarth.org .

Classroom Exploration of the Oceans: An Online Virtual Teacher Conference

The National Geographic Society and NOAA's Office of Ocean Exploration (OE) hosted a 9-part virtual teacher workshop series using ocean exploration to enhance learning in the classroom. Teachers were provided with lesson plans and information, with workshop information linking to Geographic's Ocean Atlas Teacher's Guide, OE's lesson plans, and the Oceans Scope and Sequence Matrix for K-12 Teachers.

<http://coexploration.org/ceo>

Clean Beaches Blue Wave Campaign

The Clean Beaches Council is a non-profit organization devoted to sustaining America's beaches. Their flagship program is the *Blue Wave Campaign*—America's first environmental certification program for beaches. The goal of Blue Wave is to promote public awareness and voluntary participation in beach sustainability, including water quality, habitat conservation, public information and education.

<http://www.cleanbeaches.org/bluewave/bluewave.cfm>

Clearing Magazine

The quarterly resource magazine, *Clearing: Environmental Education Resources for Teachers*, provides the latest news, information, perspectives, teaching ideas, and resources available to teachers of all grade levels and all subject areas with environmental and natural resources education. Published since 1978, Clearing has published over 100 issues.

<http://www.clearingmagazine.org/> .

Coastal and Estuarine Science News

The Estuarine Research Federation offers Coastal and Estuarine Science News, funded by the Ocean and Coastal Protection Division of the EPA, to strengthen the link between science and management in coastal systems. Back issues are posted at

<http://www.erf.org/cesn/> . You can subscribe to the mailing at

<http://www.erf.org/user-cgi/cesnlist.pl> .

Coastal Storm Impacts

The NOAA Ocean Service is working with the Weather Channel on a 30-minute show on the impacts of coastal storms on communities and some of the tools/capabilities that are available to help them. The key issues the show will address include ways that the public can be better informed about coastal storms.

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Coastal Wildlife – Feeling the Squeeze

University College in Chichester, England hosted a video conference on October 1, 2003, with presentations on climate change, coastal habitats and coastal defense, a field visit, and workshop sessions.

<http://www.excitingscience.com/pages/924510/>

Coastwatching by Computer: Water Quality and the System-Wide Monitoring Program (SWMP)

The NERR System-wide Monitoring Program tracks short-term variability and long-term changes in estuarine waters to understand how human activities and natural events can change ecosystems. It provides long-term data on water quality and weather at frequent time intervals. There are lesson plans giving step-by-step instructions for accessing and downloading the data and a graphing exercise to help use the data in your classroom.

<http://www.nerrs.noaa.gov/Monitoring/welcome.html> .

<http://www.waquoitbayreserve.org/education.htm#lp> .

The C.O.O.L. Classroom Website

The *Coastal Ocean Observation Laboratory Classroom*, from New Jersey's Jacques Cousteau National Estuarine Research Reserve, is a series of Internet-based instructional modules aimed at middle and high school students, linking classrooms with active oceanographic research investigations. The website includes movie clips, downloadable worksheets and teaching guides, career cards, a glossary, and more.

<http://www.coolclassroom.org/home.html>

Copper River Delta Shorebird Festival

The Copper River Delta Shorebird Festival hosts activities, workshops, and community events. The Delta is part of the Western Hemisphere Shorebird Reserve Network and its Shorebird Festival is one of Alaska's premier birding events, with millions of shorebirds and over 30 species of migratory shorebirds resting and feeding there during spring migration. The Delta is the largest continuous wetland on the Pacific coast of North America.

<http://www.cordovachamber.com/index.cfm?showsecondarylinks=true&showcontentlinkID=352&primarylinkID=352> .

Coral Park Buddy Program

As part of Dive In To Earth Day 2004, divers in the U.S. are being asked to team up with dive buddies and park managers around the world in a campaign to support coral reef protected areas. Participating dive operators, clubs, and associations will organize fundraising events leading up to Earth Day (April 22), and the proceeds will pay for conservation projects at some of the world's most spectacular dive sites.

<http://www.coralreefalliance.org/divein/parkbuddy/> .

Coral Reef Education and Outreach Library

This online catalog connects educators with the tools they need to raise public awareness of coral reefs. In the library, you'll find publications from the Coral Reef Alliance, such as the *Coral Friendly Guidelines*, as well as booklets, posters and videos from other organizations around the world. Also check out the Teachers' Resources.

<http://fmp.coralreef.org/library/home.htm> and <http://www.coralreef.org/tools/teachers.html>

Coral Reef Report

This new online magazine has been launched to "celebrate the power and mystery of the planet's coral reefs." The Coral Reef Report features articles, personal stories, and audio interviews with scientists and others. The site also features a rotating photo gallery.

<http://coralreefreport.info> .

Coral Reefs: Canaries of the Sea DVD

The National Wildlife Foundation's Climate Change and Wildlife Program, with funding support from NOAA, has produced a multi-media DVD entitled *Coral Reefs: Canaries of the Sea*, narrated by Jack Hanna. The DVD will help raise awareness of the effects of global climate change and other serious environmental problems on coral reefs around the world. It also provides ideas about what people can do to help protect reefs.

glick@nwf.org

COSEE-West: A Center for Ocean Science Education Excellence

COSEE-West is a collaboration between the Universities of California Los Angeles and Southern California. COSEE-West is dedicated to three goals: Educating the public about oceans and their impact on their daily life and increasing general environmental awareness; using ocean science as an incentive to increase general science literacy; and increasing the number of students that choose science and ocean science careers.

<http://www.usc.edu/org/cosee-west> .

Cruises and Virtual Expeditions to the Charleston Bump

From August 2-13, 2003 scientists explored the Charleston Bump, a complex bottom feature of great topographic relief located southeast of Charleston, South Carolina. The rocky, erosion-resistant rise impedes the flow of the Gulf Stream, deflecting it offshore and creating a zone of gyrating eddies and swift, narrow currents. Background material, daily logs, photodocumentaries, a video gallery, and lesson plans are available.

<http://oceanica.cofc.edu/home.htm>

Digital Library of Earth System Education

The Digital Library of Earth System Education is creating an online library of educational resources and services to support Earth system science education at all levels in both formal and informal settings. A quick search on "marine" came up with 152 entries.

<http://www.dlese.org/>

Dive In To Earth Day

Organize a beach or underwater cleanup, host an educational slideshow or film, conduct a fish survey, or raise funds for a marine protected area, by "Diving In" this Earth Day. 2003's event garnered 270 activities, helping protect coral reefs and aquatic ecosystems in 58 countries and territories around the world.

<http://www.coralreefalliance.org/divein/> .

The Dune Book

North Carolina Sea Grant offers a comprehensive book on sand dunes. This publication describes the benefits of dunes and dune vegetation, as well as the best dune management practices along developed shorelines where people, buildings and roads are already in place. It also describes how to select and plant the best dune grasses for the North Carolina coast and provides tips and colorful illustrations on the most common dune species.

http://www.vims.edu/bridge/index_geology.html .

EarthCare

This resource features online stories about conservation, earth and ocean stewardship, ecosystems, and more. It showcases the Earth & Sky radio spots, along with links for more information.

<http://www.earthsky.org/shows/earthcare> .

Economic Values of the World's Wetlands

This reports highlights the high economic value of functioning wetlands. Seventy billion U.S dollars worth of goods and services from freshwater resources could be at risk annually if governments fail to manage their wetlands sustainably.

<http://www.panda.org/downloads/freshwater/wetlandsbrochurefinal.pdf>

Ecoventures: Focus on the Gulf

EcoVentures: Focus on the Gulf is a multimedia CD designed to help middle school students learn about the Gulf of Mexico's aquatic environment and the issues associated with protecting and managing aquatic resources. Students enter the world of a fictional National Park to explore a variety of ecosystems and develop a management plan for the park. There are on-line activities, expert consultants, and a video encyclopedia.

<http://eea.freac.fsu.edu> .

Edmonds Discovery Programs

This website contains information about marine life and local Puget Sound ecosystems, and provides downloadable curriculum. The site features a marine life guide and a Beach Etiquette Pledge.

http://www.ci.edmonds.wa.us/Discovery_Programs%20Website/index.html

Education for a Sustainable and Secure Future Recommendations Online

The final report of the Council for Science and the Environment for recommendations for educational reform for the U.S. can be read online. The recommendations address topics such as sustainability and security curricula for K-12 and undergraduates, community education, and planetary health.

<http://www.NCSEonline.org/NCSEconference/2003conference/>

Environmental Education In Georgia Website

The EEinGEORGIA.org website provides: EE lesson plans based on Georgia's Quality Core Curriculum standards, a searchable directory of Georgia's EE providers and the resources they offer, a statewide calendar of EE events, EE news, and easy-to-access facts about Georgia's environment. It also hosts an interactive GIS map of EE providers in the state.

<http://eeingeorgia.org/net/go/default.aspx?siteid=4863>

Environmental Science Teacher Exchange

The Environmental Literacy Council's website teacher exchange allows educators to share labs, activities, and ideas with colleagues online. The topics are drawn from the College Board's suggested labs and field investigations for the AP environmental science course. There are lesson plans, classroom curricula, and an AP Environmental Science course outline. Find the marine-oriented offerings under *Teaching Resources*.

<http://www.enviroliteracy.org/category.php/17.html>

Environmental Science: Understanding Our Changing Earth Curriculum – Request for Pilot Teachers

The American Geological Institute seeks up to 12 experienced science teachers in grades 9 through 12 to pilot test their comprehensive *Environmental Science: Understanding Our Changing Earth* curriculum in the fall semester of the 2004-2005 school year. The draft outline of curriculum and chapter headings are on the website and

include watersheds and coastal processes.

<http://www.agiweb.org/education/hses/pilottest/index.html> .

EPA Water Quality Booklet

The kids' water quality booklet, *What's Up with our Nation's Waters?* (EPA 841-F-02-002), is ready for distribution. Order individual copies from NSCEP at 1-800-490-9198 or request larger quantities by email at ncepiwo@one.net. The website highlights earlier versions.

<http://www.epa.gov/owow/monitoring/nationswaters/>

Essential Science for Teachers from the Annenberg/CPB Channel

Life Science, premiering March 3rd on the Annenberg/CPB Channel, is the first in a three-part course series *Essential Science for Teachers*. These courses help K-6 teachers understand science concepts needed to teach a standards-based curricula. Real-world examples, demonstrations, animations, still graphics, and interviews with scientists enrich content segments. Upcoming modules includes *Variation, Adaptation, and Natural Selection*; *Material Cycles in Ecosystems*; and others.

<http://www.learner.org/redirect/february/lifescience1.html> .

Estuary Live! Participate in an Estuarine Odyssey for National Estuaries Day

National Estuaries Day, an interagency campaign to promote the value of estuaries and the need to protect them, was celebrated September 27, 2003. The feature event for National Estuaries Day is *EstuaryLive*, an interactive Internet journey through estuaries for students of all ages. Naturalists and students tour different estuaries, and web participants interact with the tour guides by emailing questions during the field trips.

www.estuaries.gov and <http://www.estuarylive.org/>

Extreme 2003: To the Depths of Discovery

This website from Delaware Sea Grant highlights an expedition from November 29 - December 21, 2003. Expanded curricula have been developed for both middle and high school, and a new evaluation is in place.

<http://www.ocean.udel.edu/extreme2003>

Federal Resources for Educational Excellence (FREE) Website

The FREE website makes it easy to find teaching & learning resources from more than 40 federal organizations. A new search produces more precise results. Descriptions of resources are available throughout the site. New topic pages highlight information about literature, biology, geography, U.S. government, and more.

<http://www.ed.gov/free/index.html>

Federal Science Website

A federal website makes scientific information gathered by different agencies accessible to the public. The site is an offshoot of Firstgov.gov, housing information under one roof from the multiple agencies that perform scientific research.

www.science.gov

Fish Research of Interest to Students

Use the article at this website when you want to show your students you can be on the same "wav"-length as they are. Scientists studying underwater fish acoustics have identified another possible mechanism herring use to communicate.

<http://www.newscientist.com/news/news.jsp?id=ns99994343>

Floating Classroom for Educators and Students

The *Research Vessel Karma*, a 57' former commercial shrimp boat, functions as a floating classroom for coastal studies. The primary audience for this program is students in grades 4-12. Additional initiatives include Elderhostels, youth development camps and courses, marine education workshops and professional development, and short courses for informal educators.

w-younger@tamu.edu

Flow: The Essentials of Environmental Flows

IUCN and its *Water and Nature Initiative* published a new guide to "environmental flows" –the water regimes provided within a river, wetland or coastal zone to maintain ecosystems and their benefits where there are competing water uses and where flows are regulated. *Flow* includes chapters on international legal instruments, defining water requirements, covering costs, and building capacity.

<http://www.waterandnature.org/flowlaunch.html>

Forest Service Partnership Resource Center

The Partnership Resource Center is a centralized website from the Forest Service to provide information and tools to promote partnerships. The website includes resource documents, links to training opportunities and funding sources, tools and templates, and lists of organizations and agencies which work collaboratively and in partnerships to manage natural resources.

<http://www.partnershipresourcecenter.org/index.shtml> .

Free Use of Camping Equipment Through The REI Gear Bank

The REI Gear Bank is a program designed to facilitate a positive introduction to the outdoors for kids who have not yet had a wilderness experience. In order to ensure that their first experience in the outdoors is a positive one, REI has set up a program to provide kids with quality gear so they are comfortable and can focus on having fun. The Gear Bank offers camping essentials free of charge.

relion@rei.com

Gateway to Educational Materials

The Gateway to Educational Materials offers a database of more than 24,000 education resources, including marine resource education, across more than 400 web sites.

<http://thegateway.org/>

Georgia's Amazing Coast

Fun and learning come together in *Georgia's Amazing Coast*, a collection of one hundred short, self-contained features about the flora, fauna, and natural history of Georgia's coast. Each page includes a full-color illustration and fact-filled commentary on coastal wildlife, from fifty-foot-long northern right whales to single-cell plankton.

Contact Allison Reid at areid@ugapress.uga.edu for details.

Georgia Encyclopedia

The New Georgia Encyclopedia provides an accessible, authoritative source of information about people, places, events, historical themes, institutions, and many other topics relating to the state. It includes a section on Land and Resources, including articles and information on ecological functions of the environment, environmental regions of Georgia, and more.

www.georgiaencyclopedia.org .

Getting in Step: a Guide to Effective Outreach in Your Watershed

The *Getting in Step* guidebook or on-line web-based training module provides some of the tools needed to develop and implement an effective watershed outreach plan. It helps watershed practitioners trained in the sciences address public perceptions, promote management activities, and inform or motivate stakeholders.

<http://www.epa.gov/owow/watershed/outreach/documents/>

Ghost Crab Trap Removal Program

The Barataria-Terrebonne National Estuary Program is supporting this Department of Wildlife and Fisheries' program through a ghost trap "sweep" within the Barataria-Terrebonne National Estuary, planned for February 28 through March 14, 2004. A ghost crab trap may be an old, bent, barnacle-encrusted trap without a buoy or float, or even be a relatively new trap with a line and buoy still attached (sometimes referred to as "derelict" traps).

<http://www.blue-crab.net/derelict.html> .

GIS Day 2003

GIS Day, Nov. 19, 2003, is part of the National Geographic Society's initiative, Geography Action, a year-long initiative encompassing key educational achievements. The theme of this year's Geography Awareness Week, November 16-22, 2003, is "Habitats."

<http://www.gisday.com/index.html>

Global Biodiversity Information Portal

The Global Biodiversity Information Facility (GBIF) is an international non-profit organization devoted to providing free and universal access to data regarding the world's biodiversity. Check out the GBIF Communications Portal at www.gbif.org . Many countries and organizations participate in GBIF and have made their data available at the GBIF Data Portal.

www.gbif.net .

GLOBE moves to Boulder, CO

The GLOBE Program now resides at the University Corporation for Atmospheric Research, in Boulder, Colorado. GLOBE is a worldwide hands-on, primary and secondary school-based education and science program. Internationally, GLOBE is a partnership between the United States and 100 other countries.

<http://www.gsfc.nasa.gov/news-release/releases/2003/h03-087.htm>

GPA Marine Email Newsletter

The GPA is the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, for which the United Nations Environment Programme (UNEP) provides the secretariat. Monthly GPA Outreach newsletters and weekly GPA News Updates are a new source of information about related events and information relevant to the wider marine and freshwater sector. To subscribe to GPA Outreach, send an e-mail to join-gpa-outreach@lists.healthdev.org .

GPA Outreach Online Debate

The Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) hosted an interactive online debate as part of GPA

Outreach, March 8-17, 2004. The debate focused on *Water Management and Governance* and *Perspectives on Water and Poverty Reduction*.

<http://www.unedforum.org/debate/> .

Gray's Reef Brought to Atlanta Through Distance Learning

Through Georgia's distance learning program, Gray's Reef National Marine Sanctuary educators teach and interact live with typically three and as many as seven classes across the state and nation simultaneously. With slides and video footage, they bring Gray's Reef to students from downtown Atlanta and the peanut farming communities of Plains to the mountains of New York and desert of Arizona.

<http://www.graysreef.nos.noaa.gov/education.html>

Great Lakes Invasive Species Information, Activities, and Curriculum Guide

Illinois-Indiana Sea Grant provides a wealth of Great Lakes environmental education on their website, with a focus on invasive species. The Biological Resources page links to aquatic invasives activities and resources, while Water Quality links to many useful classroom resources and information. Download *The Great Lakes Invasive Species Curriculum Guide* to provide students an introduction to aquatic invasive species.

<http://www.iisgcp.org/edu/br/grlksinv.pdf>. <http://www.iisgcp.org/edu/> .

Guides to the Species of the ACE Basin, South Carolina, and Coastal Habitats of Rhode Island

The Ashepoo-Combahee-Edisto (ACE) Basin of South Carolina has a largely undeveloped landscape with diverse habitats, with more than 1500 different plant and animal species that interact with the physical environment to create the ACE Basin ecosystem. The Internet-based Species Gallery highlights birds, fish, invertebrates, mammals, plants, and reptiles that make their home in the ACE Basin.

<http://www.dnr.state.sc.us/marine/mrri/acechar/specgal/birds.htm> .

Rhode Island is home to an array of coastal habitats, including salt marshes, seagrass beds, and river systems which contribute greatly to the state's biological integrity and diversity and help support the state's economy. Rhode Island's Habitat Restoration Portal hosts an Internet-based Species Gallery of anadromous fish, seagrass, and salt marsh habitats highlighting invertebrates, birds, fish, and plants found there.

<http://www.edc.uri.edu/restoration/html/gallery/seagrass.htm>

A Guide to Understanding a Sense of Place

The free *Guide to Understanding a Sense of Place* (publication number EPA 842-B-01-003) explores the concepts of community and culture and provides tools for identifying, assessing, and working cooperatively within the social dynamics and local values connected to environmental protection. The guide is designed for people involved in community-based initiatives.

<http://www.epa.gov/ncepihom/index.htm>

High School Environmental Center Website from EPA

This EPA website helps high school students explore and learn about their environment and ways to protect it. The website helps high school students find reliable environmental information, not just on EPA's website, but through other links as well. It links to air and water issues, waste and recycling, conservation, health and safety, ecosystems, and community environmental conditions.

www.epa.gov/highschool/

Holiday Tips—Environment-Friendly

Eco-friendly tips for the holiday season:

<http://www.use-less-stuff.com/ULSDAY/42ways.html>

<http://www.earth911.org/master.asp?s=misc&a=misc/xmas/holiday.html>

<http://www.nwf.org/backyardwildlifehabitat/seasonaltips.cfm>

<http://www.ciwmb.ca.gov/PublicEd/Holidays/NoWaste.htm>

<http://www.care2.com/channels/solutions/home/343>

Interactive Estuary Poster

Check out this new feature on the Padilla Bay National Estuarine Research Reserve education web site. To access it, select Education, then the Kids Page. Move the cursor around to an animal or plant to bring up more information about it.

www.padillabay.gov .

Inter-American Biodiversity Information Network

The IABIN was created in 1996 as an initiative of the Santa Cruz Summit of the Americas meeting of Heads of State. Steadily gaining momentum, there are now 34 countries in the Americas that have officially named IABIN focal points. The website has extensive links to biodiversity databases, a search engine (both under tools), and other information.

<http://www.iabin.net/defaulteng.html> .

IUCN Caribbean Fishes Weblift

The Caribbean Fishes Specialist Group is composed of ichthyologists and fishery scientists who are engaged in research and conservation of fishes in the Caribbean region. They have created a weblift that provides links to on-line databases around the world that contain information about Caribbean fishes.

<http://caribbeanfish.org/english.html>

Journey North

Journey North is a free online program engaging students in a study of wildlife migration and seasonal change. K-12 students share their own field observations with classrooms across the hemisphere tracking migration patterns of birds and mammals, the budding of plants, changing sunlight, and other natural events and are linked with scientists who provide their expertise directly to the classroom. Find standards-based lesson plan, activities, and information.

<http://www.learner.org/jnorth/> .

Kenai Fjords Tours' Marine Science Explorers Program

The Seward-based *Marine Science Explorer Program* turns a whale watching boat into a floating laboratory/classroom where passengers become active observers and explorers, exploring Resurrection Bay. Students use hydrometers, Secchi disks, plankton nets, microscopes, and observation to learn about the Kenai Fjords area. The Prince William Sound Explorer Program explores glaciers, wildlife, weather and navigation.

<http://www.kenaifjords.com/76.cfm>

KIDZONE

The National Wildlife Federation presents this all-new website, with ideas for specific age groups from toddler to teen. The pages contain online games, nature-related

activities, and lots of other information and projects. The focus is terrestrial, but there are plenty of interesting ideas.

<http://www.nwf.org/kidzone> .

Landscapes of the Heart

Scholars, writers and environmentalists are invited to submit manuscripts for consideration in an expanded edition of the book *Landscapes of the Heart* – one that will cross the boundaries of ecology, economics, law, culture, health, the social sciences and the humanities.

http://www.telusplanet.net/public/aleksiuk/homepage/call_for_papers .

Less Than One Campaign

SeaWeb and the Ocean Wilderness Network, a non-profit coalition of regional and national organizations dedicated to protecting the ocean, have launched *Less Than One*, a public awareness campaign calling for greater protection of the ocean through the establishment of a network of fully protected marine reserves along the U.S. Pacific Coast.

www.less-than-one.org

Local Fisheries Knowledge Project

Looking through the lens of marine fisheries, high school students learn about history, culture, science, language arts, and business as part of NOAA's pilot Local Fisheries Knowledge Project. This new website highlights a pilot education project in which high school students interview fishermen and others in related industries. The site includes a description of the project, its educational framework, and will be updated as the project progresses.

<http://www.st.nmfs.gov/lfkproject/> .

Looking at the Environment from the WorldWatcher Project

The WorldWatcher project at Northwestern University recruited teacher leaders in environmental science to support *Looking at the Environment*, a new research-based GIS-based environmental science curriculum for high school.

<http://www.worldwatcher.org>

Mapping an Ocean Sanctuary – GIS in the Classroom

Mapping an Ocean Sanctuary introduces the techniques and applications of geographic information systems. Developed by the Center for Image Processing in Education and the Channel Islands National Marine Sanctuary, in collaboration with Sustainable Seas Expeditions, the six lessons teach fundamental marine and environmental concepts.

Students work with case studies, data, and images from the Channel Islands, California.

http://www.cinms.nos.noaa.gov/edu/edu_teacher.html

Marine Conservation Photo Gallery From Norbert Wu

Underwater photographer Norbert Wu has established a website where photographs taken under his Pew Fellowship are available at a nominal cost as a discretionary service to valid nonprofits and researchers.

www.norbertwu.com/pew/index.html

Marine Virtual Explorer: Hydrothermal Vents on the East Pacific Rise

The *Marine Virtual Explorer* is a simulation of a research dive in the Alvin submersible to a hydrothermal vent field on the East Pacific Rise, part of the global mid-ocean ridge

system. Mid-ocean ridges are volcanic and, of course, underwater. When you put all the heat and all the water together, you get spectacular hydrothermal activity.

<http://pangea.stanford.edu/marve/>

Meaningful Bay Outdoor Experience

NOAA's Chesapeake Bay Office is committed to connecting individuals and groups to the Bay through their shared sense of responsibility and action. The office administers the *Bay Watershed Education and Training Program*, B-WET, to provide a meaningful outdoor experience for school students in the watershed, and to provide teacher training supporting meaningful outdoor experiences for students.

<http://noaa.chesapeakebay.net/education.htm>

Mixing It Up

Mixing It Up is a compilation of 25 articles from the National Science Teachers Association's elementary school member journal, *Science & Children*. The collection of teacher-tested methods blends science with math, language and the arts. Each article is categorized by grade Science Education Standards. They include lesson plans and idea starters using interdisciplinary, integrated, and thematic approaches.

<http://store.nsta.org/searchBasic.asp?searchTerm=Mixing+It+Up> .

Museum of Comparative Zoology: Entomology Primary Type Specimen Database

The Museum of Comparative Zoology at Harvard University has an incredible collection of insects on their website. This online database contains records for primary types in the entomology collections of the Museum of Comparative Zoology (MCZ). In addition to type label data, type stage and status, the database includes high-resolution images of the type specimens. Check out the other department databases (e.g. ichthyology), too.

<http://mcz-28168.oeb.harvard.edu/mcztypedb.htm> .

NASA Oceanography Website

See what NASA does in the field of oceanography. NASA Oceanography conducts a program of satellite missions and research projects with its partners to enable global ocean science. This website has links to NASA missions, projects, partnerships and educational materials. For more information, check out

<http://oceans.nasa.gov/Home.htm> .

National Coastweek 2003

National Coastweek, September 20-27, 2003, was coordinated by the Coastal States Organization in conjunction with NOAA, state Coastweek and Coast Day observances, and in partnership with a variety of federal government agencies and national coastal and ocean organizations. The celebrations kicked off with the International Coastal Cleanup and culminated with National Estuaries Day.

<http://living-edge.org/participate/coastweek.html>

National Energy Education Development Project

NEED (National Energy Education Development) develops curriculum and conducts teacher training for K-12 teachers and students. The program is focused on the production, uses and science of energy in all its forms. The NEED program and website includes curriculum materials, professional development, evaluation tools, and an awards program. Note that you may be more successful opening some of the pdf files from the website if your Adobe Acrobat Reader® is already open.

www.need.org .

National Geographic Crittercam

The Crittercam is a research tool using a video camera temporarily attached to animals (including marine mammals) to study their behavior. The National Geographic Channel hosts a TV series highlighting Crittercam footage and research. Samples of the videos are available on the website, along with excerpts from the shows.

<http://www.nationalgeographic.com/channel/crittercam/> .

National Student Summit on Ocean Issues

Coastal America is partnering to host a National Student Summit on Ocean Issues, January 14-16, 2004, Washington, DC. Students, teachers, and marine educators from 14 Coastal Ecosystem Learning Centers will present their research on regional ocean issues to a panel of experts, and present their findings as a national issue paper, along with a "Proclamation of Student Commitment to Action on Ocean Issues."

Contact gene.cope@noaa.gov for more information

NOAA Fisheries Bycatch Website Updated

The bycatch section of the NOAA Fisheries website has received a major update to include recent activity, including sea turtle bycatch reduction research; amending the fishery management plan for Atlantic tunas, swordfish, and sharks; management to reduce seabird incidental take; and amending the fishery management plan for the shrimp fishery of the Gulf of Mexico.

<http://www.nmfs.noaa.gov/bycatch.htm> .

NOAA Science Camp

A weeklong pilot program summer session designed to expose school age children to NOAA's activities in the monitoring and protection of the environment was piloted in the Seattle area at Sand Point.

Sarah.Morison@noaa.gov

Non-Point Source Pollution Model from Environment Canada's Georgia Basin Ecosystem Initiative

The *Non-Point Source Pollution Model* is an interactive environmental education tool for understanding pollution, where it comes from, and what we, as individuals, can do about it. Instructions for making the model are available on the website, along with resources and curriculum connections.

<http://www.pyr.ec.gc.ca/EN/IPM/index.shtml>

NowCOAST Web Mapping Portal

NowCOAST provides spatially-referenced links to real-time information from meteorological, oceanographic, and river observing networks. Coast Survey's Web Portal allows rapid spatial location of real time weather, ocean, and river information for coastal areas. It also links to NOAA's model forecast guidance and NWS' weather and marine forecasts for major estuaries and seaports, the Great Lakes, and coastal regions.

<http://nowcoast.noaa.gov>

NSTA Teacher's Grab Bag

The National Science Teachers Association's Teachers' Grab Bag is on the web. You can find hundreds of free and almost free items such as videos, publications, CD-ROMs, lab kits, and much more. The database is searchable by cost and type of product. Keep

it in mind if you have items you'd like to distribute, as the current database comes up empty from a search on "marine."

<http://www.nsta.org/resourcesgrabbag>

Ocean Literacy

This web site and online survey are the result of a partnership of agencies and institutions concerned with improving ocean literacy. Check out the extensive links under Education Resources, Links, and National & Regional Programs.

<http://oceanliteracy.org/> .

OBIS-SEAMAP Digital Archive

The Ocean Biogeographic Information System – Spatial Ecological Analysis of Megavertebrate Populations (OBIS-SEAMAP) project is part of the Census of Marine Life initiative. It is a publicly-available, web-based digital archive of marine mammal, seabird and turtle data, along with oceanographic and environmental data. Useful tools include on-line mapping capabilities, species profiles, and down-loadable data.

<http://obis.env.duke.edu>

OceanAGE Web Chats With Marine Explorers

Ocean Careers to Inspire Another Generation of Explorers (OceanAGE) invites students to interact with women and men who explore our ocean planet to better our world.

Explorers provide students with first-hand knowledge of careers through live interviews, profiles, and mission logs. Video profiles, biographies, and background materials related to their work are available, and the website features interactive video Web Casts.

<http://oceanexplorer.noaa.gov/edu/oceanage/>

The Ocean Project Community Conservation Action Map

The Ocean Project website has a searchable map of their partner organizations that utilize the help of volunteers and members. Website visitors can click on their state or Canadian province and find a list of organizations and volunteer opportunities related to aquatic or ocean conservation in their community.

http://www.theoceanproject.org/action_map/

Oceans of Life—An Educator's Guide to Exploring Marine Biodiversity

World Wildlife Fund presents their new educator's guide, *Oceans of Life*. The marine biodiversity module, designed for middle-school educators and students, has background information, activities, and case studies. Appendices offer a framework, mini case studies, marine legislation, planning charts, a glossary, a bibliography, and more. Order the guide through Acorn Naturalists.

www.acornnaturalists.com

Of Sand and Sea: Teachings From the Southeastern Shoreline

Of Sand and Sea: Teachings From the Southeastern Shoreline, by Paula Keener-Chavis and Leslie Reynolds Sautter, is an introductory text which covers the ocean's geology, biology and chemistry. It is written at a reading level for middle and high school students. While you're on the website ordering a copy, check out the other offerings available at nominal or no charge.

http://www.scseagrant.org/library/library_pubs_marine.htm

O'Neill Sea Odyssey in Monterey Bay National Marine Sanctuary

The *Sea Odyssey* program is a 3-hour learning experience that takes place aboard the 65-foot Team O'Neill catamaran with follow-up lessons at the shore-side Education Center. The students rotate through three stations: marine biology, ecology, and navigation. There is a curriculum guide, *Investigations in a National Marine Sanctuary*, which accompanies the different stations.

<http://www.oneillseaodyssey.org/>

Paddle Bayou Lafource, Louisiana

Back to the Bayou 2003, November 7-10, 2003, from the Barataria-Terrebonne National Estuary Program, featured a 4-day canoe and kayak trip, daytime and evening festivities, plus the opportunity to appreciate bayou communities and life along the bayou from Donaldsonville to the Gulf of Mexico.

<http://paddling.btneq.org/>

Pennies for the Planet

World Wildlife Fund sponsors the *Pennies for the Planet* campaign. Kids learn about three priority regions around the world, helping get them excited about conservation and connecting environmental education with environmental action. The 2003 program includes the Everglades and South Florida. The website includes links to free posters, education activities, and additional educator's materials.

<http://www.worldwildlife.org/windows/pennies/>

Pew Fellowship Nominators

The Pew Fellows Program in Marine Education solicited nominators for Pew Fellowships. Their goal was to recruit a diverse group of nominators who have knowledge of outstanding individuals doing innovative work in marine conservation around the world.

dmeck@neaq.org

Plastic in the Ocean

Marine debris has recently been highlighted in newspapers and was featured on Canada's Discovery Channel. TV documentary maker Ian Connacher describes a flood of junk flowing into the sea – some to circulate endlessly in currents, some to be eaten by fish, and then by humans. He produced a feature piece on ocean plastic sampling, highlighting the implications of land-based sources of pollution on the marine environment.

<http://www.exn.ca/dailyplanet/view.asp?date=1/15/2004> .

Point2Nature Environmental Education Software Developers

Point2Nature by CD Meyer, Inc. is a multimedia company that specializes in environmental education software for zoos, aquariums, nature centers, and museums. They use graphics, dynamic animations, music, sound effects, panoramic photography, and video to engage students.

www.point2nature.com

The Polyquarium

The Macrogalleria is a website from the Department of Polymer Science at the University of Southern Mississippi. The project provides working knowledge of polymers and related concepts to students of all levels, at multiple levels. The program is

informative and entertaining to both beginners and more advanced students of polymer science. The Polyquarium mimics aquarium displays.

<http://www.psrc.usm.edu/macrog/sea/index.htm>

Project Dolphin Campaign

NOAA Fisheries Office of Protected Resources has developed educational materials about the dangers of feeding and otherwise closely interacting with wild dolphins, including brochures, posters, warning signs, and public service announcements.

jill.lewandowski@noaa.gov

Project Oceanica

Project Oceanica continues to add new features to their website, including Fish Watch and Shelf Edge Reefs. Check out the Transects Program, designed to immerse undergraduate and graduate students in oceanographic research by taking them to sea to collect biological and geological samples and later analyze the data in the laboratory. Transects is funded for two years, and a total of four 5-day research cruises and follow-up oceanographic research courses will be offered over the 2 year project.

<http://oceanica.cofc.edu/home.htm> .

Project WILD Science and Civics: Sustaining Wildlife Curriculum

Project WILD's high school curriculum is designed to serve as a guide for involving students in environmental action projects aimed at benefiting the local wildlife found in a community. It involves young people in decisions affecting people, wildlife, and their shared habitat in the community. The program consists of four major components: awareness, participatory democracy, habitat exploration and taking action.

http://www.projectwild.org/materials/science_and_civics/science_and_civics.htm

Ramsar Site Database

The Ramsar Sites Database is now online. Wetlands International manages and develops the database. A search facility now makes it possible to find one or more Ramsar sites by selecting on nearly any combination of criteria, including wetland type or land use, designation date, and others.

<http://www.wetlands.org/RSDB/default.htm> .

Ramsar Video

The 22-minute Ramsar video, available in English, French, and Spanish, offers an introduction to the problems facing wetlands everywhere and focuses upon international case studies. For easier downloading, "Save Target As" (Microsoft Internet Explorer) or "Save Link Target As" (Netscape) and save the whole film to your hard disk, then launch.

http://www.ramsar.org/wwd2003_index.htm#offer

Rare: Inspiring Conservation

The RARE Center for Tropical Conservation has pioneered innovative approaches to achieving conservation results through community-based education. Rare supports hundreds of grassroots conservationists around the world each year, providing them with training, technical support, and resources. Its Pride campaign bridges the gap between the scientific realm and the daily lives of local people through social marketing techniques, making conservation messages relevant to the local community.

<http://www.rarecenter.org/> .

Reach the World

Reach the World is a nonprofit educational media developer and a provider of school-based training in instructional technologies. Its mission is to link students and teachers in low-income communities with real-world, global expeditions that have the power to expand learning beyond the classroom. Follow the voyage of the Makulu, as the trade winds carry her across the Atlantic Ocean towards Barbados in the Caribbean Sea. Check out the materials in the Floating Classroom.

<http://reachtheworld.org/> .

Riverquarium to open in Georgia

The Flint Riverquarium will open in Albany, Georgia, to promote conservation through aquatic exhibits and educational experiences that engage diverse audiences by interpreting the unique ecosystems of the Flint River watershed. Exhibits will feature fish and other aquatic animals from the Flint River and downstream, including Apalachicola Bay, Lake Seminole and the Gulf of Mexico. In addition, the Riverquarium hosts a World of Water exhibit featuring river systems from around the world.

www.flintriverquarium.com .

Sanctuary Integrated Monitoring Network

The Monterey Bay National Marine Sanctuary launched the Sanctuary Integrated Monitoring Network (SIMoN). Users can access the website to obtain local water quality monitoring information, generate watershed maps, locate monitoring information, link to data sets from individual stations, and download GIS layers.

<http://mbnms-simon.org> .

Science Events At Your Fingertips

The National Science Teachers Association has an online calendar identifying science-related events and activities. This information includes programs, grants, and workshops in the field of science. Visitors can search by category, grade level, or region, and submit their own upcoming event.

<http://www.nsta.org/main/calendar/events.php>

Sea Ducks of Alaska

The Center for Alaskan Coastal Studies has developed a hands-on activity guide for grades 4-6 on the Sea Ducks of Alaska. The guide offers teacher background information and teaching activities that explore sea duck adaptations, their role in food webs, provides an opportunity to research Alaskan species, and looks at conservation issues.

www.akcoastalstudies.org

Sea Education Association K-12 Lesson Plans

The Sea Education Association offers at-sea experiential programs with shore and sea components to develop students' and teachers' ability to apply scientific thinking and method to the marine environment. Lesson plans are posted for teachers to help bring the ocean into the classroom. Topics include marine biology and ecology, geological and physical oceanography, and nautical science, listed by grade level and topic.

<http://www.sea.edu/k12LessonPlans/k12pgmtop.htm>

Sea to Shining Sea – Partners in Conservation Webcast from Texas and Alaska

The *Sea to Shining Sea – Partners in Conservation* webcast, November 14, 2003, covers global topics and issues from Alaska to Texas. It is divided into three major

topical areas: A Sense of Place: Understanding the Habitat; Wildlife: Adaptations and Concerns; and Human Impact and Involvement. Topics, guiding questions, curriculum standards, Internet resources and activity ideas are included online.

<http://www.tpwd.state.tx.us/expltx/eft/seacenter/guide.phtml>

Sea Turtles Resources

Check out these sea turtle web resources

<http://www.sefsc.noaa.gov/seaturtlepublications.jsp> .

http://www.nmfs.noaa.gov/prot_res/PR3/Turtles/symposia.html .

http://www.floridamarine.org/features/view_article.asp?id=2156 .

www.widecast.org .

<http://www.ex.ac.uk/~pcthornt/EuroTurtle/homep.htm> .

www.seaturtles.org .

www.seaturtle.org/mtn .

www.floridaleatherbacks.com .

SeaWinds Scatterometer

One of NASA's Earth-observing instruments, the SeaWinds scatterometer, Midori 2, transmits radar data to measure wind speed and direction over Earth's oceans. It provides high resolution and broad geographic coverage of ocean wind speed and direction, sea ice extent and properties of Earth's land surfaces.

<http://winds.jpl.nasa.gov>

SE-PORT Ocean Awareness Days from SouthEast COSEE

The South East Portal to Ocean Research for Teachers (SE-PORT) is an initiative from the SouthEast Center for Ocean Sciences Education Excellence (SouthEast COSEE). The targeted region includes Georgia, North Carolina and South Carolina. SE-PORTs are partnerships between SouthEast COSEE, an informal education institution (e.g. aquarium, science center), and the teachers who participate in the SouthEast COSEE Ocean Sciences Education Leadership Institutes.

<http://www.scseagrant.org/se-cosee/partners.htm> .

Shark Tagging Through Project Oceanica

Charleston Bump research conducted in 2003 includes tagging and tracking of oceanic sharks using satellite tags. Tagging results will be transmitted by satellites and posted on the Project Oceanica website. Students e-mailed questions to the shipboard and laboratory researchers and the results are posted on the web. Student activities and other information are also posted.

<http://oceanica.cofc.edu/SharkTagging/Home.htm>

Shifting Baselines

The Ocean Conservancy is partnering with other organizations, scientists, and filmmakers to produce Public Service Announcements, slide shows, and other multimedia resources to communicate some of the issues involved in ocean resources declines and the shifting baseline phenomena. All materials may be downloaded from the website. Both English and Spanish versions are available.

http://www.shiftingbaselines.org/index_site.html#

Shorebird Management Listserve

A monitored shorebird management listserv, a cooperative partnership of the U.S. and Canadian Shorebird Conservation Plans and maintained by the U.S. Fish and Wildlife

Service, provides users with: a forum to discuss approaches to managing shorebird habitats and discuss regional-scale projects; information on shorebird management resources; answers to specific questions; and technical advice on monitoring shorebirds.
Brad_Andres@fws.gov

Shorebird Sister Schools Program

The Shorebird Sister Schools Program is an Internet based environmental education program that connects students, educators, biologists, and birding enthusiasts along migratory flyways. The program includes three key components: K-12 curriculum, email network, and web site. A webcast on April 7, 2003 explored shorebirds, their migration, and the Shorebird Sister Schools Program.
<http://sssp.fws.gov>

Shoreline Trash: Studies at Padre Island National Seashore

For advanced students interested in pursuing more exploration of the problem of marine debris, the National Park Service published a comprehensive study: *Shoreline Trash: Studies at Padre Island National Seashore, 1989-1998*.
phyllis.dermer@noaa.gov

SouthEast Portals to Ocean Research for Teachers

SouthEast Center for Ocean Sciences Education Excellence (SouthEast COSEE), reaches out to the education community with ocean science information in the southeastern region of NC, SC and GA. 12 SE PORTs (SouthEast Portals to Ocean Research for Teachers) have been formed in partnerships between SouthEast COSEE, an informal education institution (such as a museum or aquarium), and teachers.
<http://www.scseagrant.org/se-cosee>

State of the Nation's Ecosystems: Annual Update 2003

The first annual update of the 2002 report *The State of the Nation's Ecosystems: Measuring the Lands, Waters, and Living Resources of the United States* has been released by The Heinz Center. The report was published in 2002, with a 20-page chapter on Coasts and Oceans, as well as chapters on five other types of ecosystems. The 2003 update provides access to data on ecosystem conditions that have become available since the full report was published.
<http://www.heinzctr.org/ecosystems/report.html> .

Teacher At Sea Program

Join NOAA's *Teacher at Sea Program*, August 26-September 26, 2003, as they crossed the equator while servicing the TAO/TRITON buoy array in the equatorial Pacific Ocean. This array is critical to our understanding of El Niño and for monitoring the dynamics of our oceans. There are webcasts, videos, and opportunities for teachers on future voyages.
<http://www.tas.noaa.gov>

Teachers' Domain Multimedia Digital Library

WGBH, through funding from NSF, provides a digital library of multimedia for teaching and studying life sciences, including ecology and ecosystems, evolution, adaptation, genetics, and more. It includes broadcast clips and video modules from programs such as NOVA, A Science Odyssey, and ZOOM; interview segments; out-take footage; and interactive web-based activities, along with contextual information for teachers.
<http://www.teachersdomain.org>

Team OCEAN – On-Water Ocean Conservation Education Action Network

The Team OCEAN Program promotes public education, including informative brochures as well as one-on-one interpretation; stewardship, by instilling a sense of personal understanding, ownership, and responsibility for the Sanctuary among the general public; and sanctuary presence on the water, emphasizing the importance of the proper use of our resources, now and for future generations.

<http://www.fknms.nos.noaa.gov/edu/ocean.html> .

This Week at Hilton Pond – Seagulls

While the focus for this research center is the South Carolina Piedmont, the latest posting on seagulls underscores the fact that you cannot separate “marine” from the greater environment.

<http://www.hiltonpond.org/ThisWeek040115.html> .

Tidepool Math

From the Minerals Management Service (MMS) and the Multi-Agency Rocky Intertidal Network (MARINE) comes Tidepool Math, curricula for K-8 and high school. Students use a plot of a mussel bed to better understand sampling, estimating, and the scientific method. The website has downloadable curricula, photographs to use for the sampling exercises, and flash cards of typical tidepool organisms, or order the CD. Check out the MMS Kids' Pages for other information on Ocean Energy, Sand, and more.

<http://www.mms.gov/mmskids/> .

Track Sea Turtles On-Line

SEATURTLE.ORG provides sea turtle researchers with a tool for collecting, managing and sharing sea turtle satellite tracking data in near real-time. There is a list of tracking projects, links to background information about each program and the turtles they are tracking, and maps that are updated daily. A section for teachers is under development.

<http://www.seaturtle.org/tracking/>

Traveling Wetland Education Trunks for Texas

Twenty-five *Wetland Education Trunks* have been distributed to educators and education centers across Texas and are available for loan to teachers. The trunks contain lesson plans, books, posters, videos, Texas Amphibian Watch materials and field equipment to guide students in their investigations of wetland habitats. The trunks emphasize learning in the classroom and in the field.

<http://www.tpwd.state.tx.us/edu/>

Underwater Videos Available On-Line

The Perry Institute for Marine Science / Caribbean Marine Research Center posts three educational videos to provide a glimpse at our underwater environments, including MPAs, coral reefs, and Nassau Grouper.

<http://www.cmrc.org/pubs.htm>

UNEP Publications on Water & Waste Management and Tourism & Biodiversity

A Manual for Water and Waste Management: What the Tourism Industry Can Do to Improve Its Performance looks at solid waste and water management and provides guidelines and examples of how tourism operations can achieve positive results.

Tourism and Biodiversity: Mapping Tourism's Global Footprint, illustrates the overlap between tourism development and biodiversity hotspots.

http://www.uneptie.org/pc/tourism/library/mapping_tourism.htm
http://www.uneptie.org/pc/tourism/library/waste_manual.htm

Vocalizations of Georgia's Frogs CD

Presenting the unique calls of all 31 species of Georgia's frogs, the Calls of the Wild CD is produced by the Georgia Department of Natural Resources, Wildlife Resources Division to introduce the wonderful and often bizarre calls of Georgia's frogs and toads. The CD has separate recordings of every native species. Narration is provided for each of the individual species' recordings, along with a 15-page booklet.

<http://eeingeorgia.org/page.asp?itemid=13156>

Watchable Wildlife Program

The *Watchable Wildlife Program* is a cooperative, nationwide effort made up of state and federal agencies to support the public's interest in viewing wildlife and conserving wildlife habitat. NOAA Fisheries' Office of Protected Resources and the National Ocean Service's National Marine Sanctuary Program ensure that marine species and habitats are included in the program, and develop appropriate marine viewing guidelines.

jill.lewandowski@noaa.gov

Water Education Posters

This U.S. Geological Survey series offers six educational posters, on Wetlands, Water Use, Wastewater, Navigation, Ground Water, and Water Quality. Each poster is available in two versions, one for elementary students and one for middle-school students.

<http://water.usgs.gov/outreach/OutReach.html>

Water for Life: UN Proclaims International Water Decade 2005-2015

At its 58th session, the United Nations General Assembly adopted a draft resolution proclaiming the period from 2005 to 2015 as the International Decade for Action, "Water for Life", starting on World Water Day, 22 Mar 2005. The goal of the Decade is "a greater focus on water-related issues, with emphasis on women as managers of water to help to achieve internationally agreed water-related goals".

<http://www.unesco.org/water/> .

WaterNews

WaterNews is a weekly on-line publication of the U.S. Environmental Protection Agency's Office of Water that announces publications, policies, and activities.

<http://www.epa.gov/water/waternews/> .

Water Resources of the Caribbean Countries & Territories

The CD *Water Resources of the Caribbean Countries & Territories* is now ready for distribution (for a nominal cost). The CD has information for 35 countries, islands and/or territories, including maps; size, population, climate, economy; water availability, supply, and demand; vulnerability of coastal aquifers; coastal zone issues; and legal setup and institutions.

jasminko.karanjac@uwimona.edu.jm .

Water Science for Schools

This site from the U.S. Geological Survey explores many aspects of water. This website includes pictures, data, maps, and an interactive center where you can test your water knowledge. A glossary and related links are also included.

<http://ga.water.usgs.gov/edu/>

Watershed Patch Project

The EPA's Watershed Patch Project teaches students what watersheds are and motivates them to get involved in local watershed protection activities. The booklet includes step-by-step instructions for community-based watershed protection activities, including stream walks, monitoring projects, and stream cleanups. The project, with certificate awards, is modeled after a similar project with the Girl Scouts of the USA.

<http://www.epa.gov/adopt/patch/certificates/>

Watery Ring of Life: Saving our Estuaries, a PBS Broadcast

The Teaching Learning Network has produced a documentary featuring four National Estuary Programs: Maryland Coastal Bays, Narragansett Bay, Mobile Bay, and Puget Sound. The documentary presents information about estuaries, including their social and economic importance, and highlights steps the four estuaries are taking to protect and restore their valuable resources.

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Waves, Wetlands, and Watershed, and Coastal Bluffs

The California Coastal Commission presents *Waves, Wetlands, and Watersheds*, an activity guide that addresses issues such as endangered species, coastal geology, and water use. A four-page primer on *Coastal bluff erosion* further investigates coastal processes. A Marine, Coastal & Watershed Resource Directory contains information on organizations working on issues related to the coast, including educational resources.

www.coastforyou.com, click on "For Educators."

Wetland User's Guide

An Introduction and User's Guide to Wetland Restoration, Creation and Enhancement, produced by EPA and NOAA, introduces non-technical readers to the basics of wetland projects, including planning, implementing and monitoring, and provides other references. To request a free copy, key EPA843B03001 into the search engine.

<http://www.epa.gov/ncepihom/index.htm>

Wetlands Documents

A variety of publications are available for downloading at the Wetlands International website, including *The Socio-Economics of Wetlands* and *The 7th Directory of Wetlands of International Importance*.

<http://www.wetlands.org/pubs&nwdnloads.htm>

Wetlands Training and Curricular Guides

POW! Planning of Wetlands guides educators through the creation, restoration or enhancement of a wetland on school grounds or within the community. *Wow! The Wonders of Wetlands* includes activities in lesson plan format, background information on wetlands, ideas for student action projects, and a wetlands resource guide. An online wetlands course covers basic wetland ecology, types, functions and management.

<http://www.wetland.org/educa.htm>

What's an Estuary, Now You Know

The Association of National Estuary Programs, in partnership with the National Estuarine Research Reserves, launched the *What's An Estuary? Now You Know* campaign to make the word "estuary" a household word by 2005. A multimedia presentation is

available for viewing and downloading from the website. In 2004, the campaign will launch a media campaign featuring television, radio, and print ads.

www.whatsanestuary.com

What's an Estuary? Now You Know CD-ROMs Available

4900 copies of the Association for National Estuary Program's *What's an Estuary? Now You Know* CD-ROMs are available to order from the US EPA's National Service Center for Environmental Publications. There will be a limit of 25 CDs per order, though requests for larger quantities will be considered for special events or estuary education and outreach needs.

<http://www.epa.gov/ncepihom/> .

Whooping Cranes Migration

This educational website was developed through a partnership of Annenberg/CPB, Journey North, and the Whooping Crane Eastern Partnership. This site connects to an extensive selection of lessons, activities and information, facts about Whooping Cranes in question/answer format, and background information about the Whooping Crane Reintroduction Study. Users can also connect to highlights from the Year 3 Reintroduction and Migration including maps, video clips, and photos

<http://www.learner.org/jnorth/fall2003/crane/index.html> .

Wild Things 2003 - Habitat is Home Sweet Home

The U.S. Fish and Wildlife Service and its partners sponsor a *Wild Things* Electronic Field Trip yearly. This year they broadcasted a free, live, interactive satellite learning adventure geared towards Grades 5-7. *Wild Things* helps students and teachers explore and learn about National Wildlife Refuges and the fascinating critters that inhabit them.

www.nationalgeographic.com/geographyaction, <http://www.wildthingsfws.org/>

Wings Over Water Festival

This six-day festival, October 14-19, 2003, highlighted the wildlife and wildlands of the Outer Banks of North Carolina. The festival was a partnership between the Fish and Wildlife Service, the National Park Service, the Outer Banks Chamber of Commerce, the Carolina Bird Club, and the Coastal Wildlife Refuge Society.

<http://www.northeast-nc.com/wings/>

World Atlas of Seagrasses

UNEP/World Conservation Monitoring Center released the World Atlas of Seagrasses. The Atlas is the first book to summarize the global status of seagrasses. The book is a collaboration of leading experts in the field.

<http://www.unep-wcmc.org/marine/seagrassatlas/>

World Conservation Monitoring Center Interactive Map Service (IMAPS)

UNEP-WCMC has been pioneering the delivery of interactive map-based conservation data on the Internet. Current GIS data sets that UNEP-WCMC maintain include Coral reefs, Seagrasses, Mangroves, and Protected Areas. The web GIS maps are easy to use and offer a basis for scientific inquiry and exploration in the classroom.

<http://www.unep-wcmc.org/index.html?http://www.unep-wcmc.org/reception/ims.htm~main> .

World Conservation Monitoring Center Publications and Information

The United Nations Environment Program – World Conservation Monitoring Center maintains a large number of reports on different aspects of the environment, including biodiversity, ecosystems, and climate change. The website has a list of reports, many downloadable.

<http://www.unep-wcmc.org/index.html>

World Oceans Day

The 11th annual World Oceans Day, created in 1992 at the UN Earth Summit in Rio de Janeiro, was celebrated on June 8, 2003. The Ocean Project has ideas to help celebrate. Visit the website periodically as people send in their activities.

www.TheOceanProject.org/news/oceanday.html

World Water Day 2004

The UN International Strategy for Disaster Reduction and the World Meteorological Organization have been charged with coordinating World Water Day 2004 on March 22, 2004. This year's theme is *Water and Disasters*.

http://www.unesco.org/water/water_celebrations/index.shtml .

World Water Monitoring Day

America's Clean Water Foundation and the International Water Association invite citizens and organizations to share in the experience of water quality monitoring. World Water Monitoring Day, October 18, 2003, serves as a global educational platform for watershed leaders, educators, and trained volunteers to help the public better understand how the actions of individuals in a watershed can impact many others.

<http://www.worldwatermonitoringday.org/>

World Wetlands Day, Yearly on February 2

The Ramsar Bureau hosts a central website for the use of everyone organizing World Wetlands Day activities. A brief description of the materials available for distribution is posted on this website. The theme for 2004 is "From the Mountains to the Sea - Wetlands at Work for Us". Information is also available in Spanish and French.

http://ramsar.org/wwd2004_prelim.htm

Wyland Ocean Challenge, "Clean Water for the 21st Century"

The Wyland Ocean Challenge promotes student understanding of the complex and interrelated issues that affect our water systems through art. The program is a marine life art and science educational curriculum available free to every K-6 classroom. The program meets national standards for science and art, and includes art activities, case studies, and science experiments to teach students about the water on our planet.

<http://www.wylandoceanchallenge.org>

Year of Clean Water Outreach Materials – Nonpoint Source and Stormwater

The EPA website highlights different monthly topics to celebrate the Year of Clean Water and 30 years of the Clean Water Act. Materials include information brochures, posters, and even crossword puzzle placemats that can be customized for your organization. The Watershed Events newsletter highlights several education and outreach campaigns.

<http://www.epa.gov/water/yearofcleanwater/month.html>

<http://www.epa.gov/owow/watershed/eventspring03.pdf>